Nye, 1643.

A

Prognostication, for the yeare of our Lord God 1643, and of the World, 5609.

Wherein is contained a description of the foure quarters of the yeare, a description of all the Constellations of Stars, both Northern and Southern; and divers other things very meet to be known.

By NATHANAELL NYE, *Mathemat.*

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A neceſſary and perfect Table to know the beginning and ending of every Terme, and the number of their Returnes, and the day of the Month, whereon they will be this preſent yeare 1643.

Hillarie Terme begins vpon the 23. of Ianuary, and ends the 13 of February, and hath foure Returnes.	Octabis Hillarij.	Ian.	20
	Quind. Hillarij.	Ian.	27
	Craſtino Purif.	Feb.	3
	Octabis Purific.	Feb.	9
Eaſter Terme, begins the 19 of April, and ends the 15 of May, and hath 5 Returns.	Quind. Paſchæ.	April	17
	Tres. Paſchæ.	April	24
	Menſe. Paſchæ.	May	1
	Quinquæ. Paſchæ.	May	8
	Craſt. Aſcent.	May	15
Trinity Terme begins on the 2 of Iune, and ends on the 21, Iune, hath but foure Returnes.	Craſt. Trin.	May.	29
	Octabis Trin.	Iune.	5
	Quind. Trin.	Iune.	12
	Tres Trin.	Iune.	19
Michaelmas Terme, begins the 23 of October, and ends the 28. of Novemb. and hath 6 Returnes.	Tres Michael.	Octo.	20
	Menſe Michael.	Octo.	27
	Craſt. Anima.	Novem.	3
	Craſt. Martinj.	Nov.	13
	Octabis Martinj.	No.	18
	Quind Martinj.	Nov.	25

Note that the Exchequer alwayes openeth eight dayes before the beginning of each Terme, excepting Trinity Terme, before which it openeth only foure dayes.

Of

Of the Starry Heaven.

The Firmament is a most glorious Heauen, adorned and beautified with all the fixed Stars, whose naturall motion is vpon 2 little circles, the one about the head of Aries, and the other of Libra, whose semidiameter is 4 de. and 18 min. and is called the motion of Trepidation, but indeed the motion of this Heauen is threefold, for first it is imagined to turne about from about in 24 houres, according to its diurnall motion, and from West to East, according to the motion of the 9 Heauen: The last is made by its own proper motion, sometimes towards the North, & other times towards the South, which is called Motus Trepidationis, as is said before: This Heauen maketh his reuolution in 7000 yeares, in this Heauen is placed the Zodiack, and all the other Circles of the Sphere, all the Stars of this Heauen are diuided into Constellations, whereby they may be known: Those which are included between the North Pole of the Ecliptique and the Ecliptick, are these following, being 21 in number, in which are contained 360 Stars, of all which 3 are but of the first magnitude, that is to say, Arcturus, Orion, and the Goat.

Here followeth the number of Stars in each constellation, and first the 21 Northerne.

1 Vrsa minor.	27	8 Lira.	11	15 Sagitta.	5
2 Vrsa major.	7	9 Cignus.	17	16 Serpentarius.	24
3 Draco.	31	10 Cassiopeia.	13	17 Serpens.	18
4 Cepheus.	11	11 Perseus.	26	18 Equiculus.	4
5 Boores.	22	12 Auriga.	14	19 Pegasus.	17
6 Corona.	8	13 Aquila.	9	20 Andromeda.	23
7 Hercules.	28	14 Delphinis.	10	21 Deltoton.	4

The 12 Signes, or Constellations of the Zodiack are beautified with 5 stars of the first magnitude, and in all these 12 Zodiacall Constellations, there are numbred 346 stars of the first magnitude are these, Aldeb ran, or the Bulls eye, Cor Leonis, Spica Virginis, Anta es and Fomahant.

♈ 13	♎ 9	♑ 8	♓ 19
♉ 33	♌ 27	♐ 21	♒ 22
♊ 18	♍ 26	♏ 31	♓ 34

In the Southern Hemisphere are accounted 15 Constellations, in those there are 7 stars of the first magnitude whereof the first is in the right shoulder of Orion, the second in his left foot, the 3 in the flood Eridanus, the 4 is the great Dog star, the 5 is the lesser Dog star, and the 6 is the star called Canopus in the ship Argo, & the 7 is named Chiron, five Centaurus. There are numbred in all these Southern Constellations 316 stars, here follow their names.

1 Cetus.	22	9 Crater.	7
2 Orion.	38	10 Corvus.	7
3 Eridanus.	34	11 Centaurus.	37
4 Lepus.	12	12 Fera.	19
5 Canis major.	11	13 Ara.	7
6 Canis minor.	2	14 Corona.	13
7 Argo.	45	15 Pilcis austrin	12
8 Hydra.	25		

All the Stars are in number 1025, of the first magnitude are 15, of the second 45, of the 3 mag. 208, of the fourth 474, of the 5 are 217, and of the 6 are 49 small stars: It is from the Earth to the Firmament, according to Tycho-Brach, 14000 semidiam. or 48184000 miles.

Of the 7 Planets in Generall.

SAturne seemeth to the eye as a star of the 2 mag. and is of a pale leaden colour, and requireth almost 30 yeares to passe through the Zodiack, his apparent diameter through the

the glasse is almost 38 seconds, therefore he is lesser than the earth and distant 3658700 miles.

Iupiter appeareth as a star of the 1 magnit: very bright, & shining, he requires 11 yeares & 312 dayes, & 21 houres to passe through the Zodiack, hee is distant from the earth 34246900 mil: and his apparent diam: is about 48 sec. therefore he must needs bee lesser than the earth, and distant 36146900 miles.

Saturne appeareth of a fiery red when he is in Apog. or farthest from the earth hee is 60 times lesser than when he is in Perig. or neerest to the earth, at the most his dia. appeares but 1 min. & 3 seconds, when he is neerest vs then he is distant 400 sem. or 1374400 mil. his diam. being but one min: and his distance 400 sem: he must needs be lesser than the earth more than 1000 times.

The Sun which is 32 min: in apparent bignesse, finisheth his course through the Zodiack in one yeare, & is bigger than the earth, according to Tycho Brach, 139 times, and somewhat more, the Sun is distant from the earth in his meane motion 1142 sem: or 3924912 miles.

The glorious Planet Venus finisheth her course about the Zodiack, in the like space as doth the Sun, Venus hath another course also about the body of the ☉, which she performeth once in 584 dayes, so that in 292 dayes there is a coniunction of the ☉ & ♀, this planet is lesse than the earth 6 times and distant from it in her meane motion, as the Sun.

Mercury passeth through the Zodiack, in like space as doth the Sun and Venus, and also hath a motion about the Sun, which he performeth in 115 dayes, he is neuer distant from the Sun aboue 29 deg. and therefore seldome seen, he is lesse than the earth 19 times, and distant from the earth as the Sun.

The Moon is the lowest of all the Planets, and finisheth her course through the Zodiack in a month, and is lesse than the Earth 42 times, and distant from the earth 56 sem. or 192416 miles.

A short description of the foure quarters of this yeare 1643.

The beginning of the Spring happeneth this year vpon the 10 of March at 4 a clock and 4 min, afternoone, at which moment the ☉ enters into the first of ♈, makes the dayes & nights of equall length, through out all the world, except vnder both the Poles, this quarter lasts while the ☉ runs through these 3 signes, ♈, ♉, and ♊, the space of 93 dayes and 7 houres, according to the opinion of the Astrologers, this quarter is like to be very wet because of the Conjunction of ♂ and ♃, which happeneth in ♓.

Of the Summer.

The Summer begins at the ☉ entring into the first min of the Northern and Tropicall signe of ♋, on the 10 of June, about 7 a clock, and 4 min. afternoone, the dayes being at the longest, at Birmingham being about 16 houres and 3 quarters, this quarter continueth while the ☉ passeth through these 3 signes, ♋, ♌ and ♍, the space of 93 dayes, 15 houres and 7 min.

Of Harvest.

Harvest beginneth when the ☉ enters into the first min of ♎, which happeneth this yeare vpon the 13 of Sept. halfe an houre past 10 before noon, the days & nights being euen, and as temperate as in the Spring this quarter hath his period at the ☉ departure from the last min. of the signe ♌, a signe cold and moist, accompanied with fogs and mists, ingendering much sickneſſe, as the plague feauers, and such like, this quarter continueth the space of 89 days and 11 houres, the ☉ passeth through ♎, ♏ and ♐

Of

Of Winter.

The Winter beginneth at the ☉ entrance into ♑, which happeneth this year vpon the 11 of Dece. at 9 & 48 at night this season is the most coldest of all the rest, the days being at the shortest at Birmicham they are but 7 hou. & a quar. in length, a warm & moist Win. is an enemy to husbandmen, but if reasonable store of Snow falleth, it preserues the fruit and begets plenty: this quart. continueth while the ☉ passeth through these 3 last signes ♑, ♒ & ♓, the space of 89 days, 0 houres & 14 min.

The Auges of the Planets.

	According to the Rodolph. dies.	min.		According to Lansberg. tables.		
♄	26	49	♐	26	49	54 ♐
♃	7	24	♑	3	51	2 ♑
♂	29	46	♌	26	27	40 ♌
☉	6	26	♋	7	42	33 ♋
♀	2	8	♒	1	50	11 ♋
☿	14	26	♐	29	46	3 ♍

	Accord. to Agrol tables.				Accord. to the Prutenic. tables.			
♄	27	26	26	♐	0	12	59	♑
♃	8	21	13	♑	7	21	5	♑
♂	29	48	37	♌	29	21	15	♌
☉	6	28	21	♋	10	48	0	♋
♀	0	36	21	♋	16	50	5	♊
☿	1	59	10	♐	1	26	0	♐

The true quantity of the Tropicall yeare is 365 dayes 5 hou. and 49 minutes.

Of the Eclipses.

THis year 1643, there will be 4 Eclipses 2 of the Sun and 2 of the Moon, the last of the Moon will only be seen about our Horison. The first of the Sun is upon the 10 of May about 2 Morning, and therefore cannot be seen of us. The 2 is of the Moon upon the 25 of March about 8 in the morning. The 3 of the Sun upon the 2 of September, not visible. The last of the Moon upon the 17 of Sept. at 6 a clock and 45 min: after-noone, the Moon being in the 4 deg: and 17 min: of Aries, the Sun in the opposite signe & deg: the beginning of this Eclipse is at 5 & 26 min: the Moon riseth at 5 & 50 min; the middle of his Eclipse is just at 6 & 3 quar & the end at 8 a clock & 4 minutes, from the beginning to the end will be 2 houres & 33 min: the Moon always descending South neer to the Dragons-taile, the latitude of the Moon in the beginning of the Eclipse is 39 min: in the middle 44 min: and in the end of this Eclipse 49 min: & 13 seconds, the parts eclipsed are 5 & 55 min: or just halfe her body thus. We shall have no Eclipse neither of the Sun nor Moon visible in our Horison the next yeare, but the next as wee shall see falleth upon the last of Ianua. Anno D. 1645 of the Moon to the quantity of 11 deg. at 7 night. I thinkit not amisse to speake more of all manner of Eclipses, for besides these Eclipses of the Sun & Moon, the Planets may Eclip. one another and all the stars in the Zodiack Anno Dom, 1574, 16 Sep. 4 morn. Venus covered Cor Leonis. In the yeare 1590, 23 sept. in the morn. Mars was covered of Venus, and in the yeare of our Lord 1590, on the 30 of Decem. Iupiter was covered of Mars, as hath been truly observed, the Moon may cover any of them because she is placed betwixt us and them. Aristotle hath observed the Moon to cover Mars: And in the yeare of our Lord 1639 upon the 23 of Novem the Planet Venus came just under the Sun at halfe an houre after 3 after noone and went of about 4. the like will happen upon the 12 of November 1643 about 11 before noone for at the instant Mercury comes Iust under the Sun and about 2 after noone, he is neareſt the center of the Sun and goes off the Sun about Sun setting, these corporall conjunctions of the Sun, Venus & Mercury, happen very seldome and because this happens this present yeare, let me intreat all those that affect those arts to observe it, the Moon may continue eclipsed the space of 4 houres add 50 min. and he may be totally obscured 2 houres and 8 min. the Sun also may be Eclipsed 2 houres and 0d min. and he may be totally eclipsed 12 min. which is almost one quart. of an houre, and we shall see here in England such a great Eclipse of the Sun upon the

9 of March, in the yeare of our Lord 1652 the like was never seen before in England, this dreadfull Eclipse begins just at 3 and 58 min. before noone, the beginning to be totally darkned about 9 and 54 m. the middle of this totall Eclipse, being one of the greatest that ever was visible in England, is at 9 & 57 min. before noone, at which time all the Stars of the first and second magnitude that be above the Horizon will appeare and the bright day will be turned into a dreadfull night, untill it be just 10 of the clock at which time the Sun will begin again to recover his light, having continued in obscurity the space of halfe a quarter of an houre and a little before eleven the Sun will wholly have recovered his light. This Eclipse I have calculated for the City of London, I cannot but commend Lansbergs Tables, which hath indifferently calculated this former Eclipse more exactly than any before him had done, only they erre in the time more than in the quantity.

How to behold an Eclipse of the Sun or when Venus and Mercury come under the Sun.

TAke a good perspect glasse and draw it out to its markes, then go into some darke room where the Suns-light least frequents and make a hole to put your glasse out at just before the Sun, so as the Sun may shine through your glasse, and be sure that the Sun shine not on each side of your glasse, the plaine glasse must be next the Sun, and the concave glasse must be within. then take a piece of paper about a quarter of a sheet, and the Sun shining through the perspect & no where on each side it, hold your paper about halfe a yard from the end of the glasse and upon the paper you may see the body of the Sun and its spots, and if Venus or Mercury come under the Sun, you may observe their diameter and continuance upon the sun, and when an Eclipse begins and ends.

Here

Here followeth the true place of the Planets the first day of every month, their nocturnall rising, setting and southing, and the southing of some principall fixed stars.

Ianuary.

The ☉ in 21. deg. 16. min. ♑ ♄ in 21 deg. ♓: ♅ in 15 d. ♓, ♂ in 10 of ♓: ♀ enter ♓: ☿ enters ♑: and ☋ in 9 deg. ♎. ♄ sets at 9 and 40 min. at night. ♅ a quarter after 9 at night. ♂ sets at a quar. after 2 morning. ♀ the euening star sets at 7 and 3 quarr. at night. ☿ riseth an houre and an halfe before the ☉.

February.

☉ in 22 50 m. ♒: ♄ in 24 ♓: ♅ in 22 d. ♓. ♂ in 24. ♉: ♀ in the first de. ♓: ☿ in 24 ♒ & ☋ in 7 d. ♎. ♄ & ♅ sets half an houre past 7 at night. ♂ sets at half an houre past one in the morn. is amongst the 7 stars on the 4 day. The euening star ♀ sets halfe an houre after 5 at night, & ☿ cannot be seene. The great dog star South iust at 9 at night. The Virgins Spike South at 23 min. after 3 in the morning.

March.

☉ in 20 53 ♓: ♄ in 27 ♓: ♅ in 28 ♓: ♂ in 8 d. ♊: ♀ in 20 ♒: ☿ in 9 ♈ and ☋ in 6 Libra. ♄ and ♅ cannot be seene. ♂ sets iust at one in the morning. ♀ cannot be seen. ☿ sets halfe an houre past 7 at night. Cor Leonis south about half an houre past 10 at night. Spica Virginis south a little more than halfe an houre past one morn.

Aprill.

☉ in 21 30 min. ♈: ♄ in 1 deg. ♈: ♅ in 6 ♈: ♂ in 26 deg. ♊: ♀ in 7 ♓: ☿ in 2 deg. ♈ and ☋ in 4 ♎. ♄ and ♅ cannot be seen, ♂ sets about one in the morn: ♀ riseth iust at

at 4 in the morn: and ☿ cannot be seen. The Scorpions heart south 3 quarters after 2 in the morn. Spica Virginis south 3 quart. past 11 at night.

May.

☉ in the 20 deg. 35 min. ♉: ♄ in 4 deg. ♈: ♃ in 13 ♈: ♂ in 14 deg. ♉: ☿ in 5 deg. ♈: ♀ in 1 deg. ♉ and ☊ in 3 deg. Libra. ♄ riseth iust at 3 in the morn: ♃ a quart after 3 in the morn: ♂ sets at one and 20 min: in the morn. ☿ riseth with ♄, and ☿ cannot be seen Arcturus South 3 quart. past 10 night.

Iune.

☉ 20 deg. 10 min. ♊: ♄ in 7 ♈: ♃ in 19 ♈: ♂ in 2 deg. ☊ ♀ in 9 deg. ♈: ☿ in the first min. of ♋: and ☊ in 1 Libra. ♄ riseth about one in the morn. ♃ a quart. of an houre past one morn: ♂ sets 3 quart: after 10 at night. ☿ riseth about 2 in the morn: ☿ cannot be seen.

Iuly.

☉ in 18 44 min: ♋: ♄ in 8 ♈: ♃ in 23 deg. ♈: ♂ in 21 deg. ☊: ♀ in 14 ♊: ☿ in 16 ☊, and ☊ in 29 ♍. ♄ riseth a little past 11 in the night. ♃ at halfe an houre past 11 at night: ♂ sets 3 quar. after 9 at night. ☿ riseth more than halfe an houre past one morn: ☿ sets halt an houre past 9 at night. Lucida Lyra South about a quart. past 11 at night. On the 7 day at night ♂ is with Regulus.

August.

☉ in 18 deg: 10 min: ☊: ♄ 7 ☍ an halfe ♈: ♃ in 25 ♈: ♂ in 10 ♍: ♀ in 20 and an halfe ♋: ☿ in 4 d. ☊: ☍ ☊ in 28 ♍. ♄ riseth abont 9 at night. Iupiter halfe an houre past at night. ♂ sets about 8 at night. ☿ the bright morn: star riseth at 2 in the morn. ☿ cannot be seen. Lucida Lyra south about 10 min: after 9 at night.

September.

☉ in 18 deg. 18 min. ♍: ♄ in 6 deg. ♈: ♃ in 24 deg. of ♈: ♂ in the 30 deg. ♍: ♀ 28 ☊: ☿ in 11 deg. ♍ ☍ ☊ in 26 ♍.

♄ in

♄ riseth about 7 at night. ♃ at halfe an houre after 7 at night. ♂ cannot be seen ☿ our bright morning star riseth 3 quarters after 3 in the morn: upon the 29 of August last she was with Regulus at night. ☿ cannot be seen. The Buls-eye South 50 m: after 4 in the morning.

October.

☉ in ♎ 17 Deg: 50 min: in Libra. ♄ in 3 and an halfe of ♈. ♃ 20 deg. of ♈. ♂ in 20 ♎. ♀ in 5 deg: Libra. ☿ in 4 m: ♂ ♌ in 24 deg: 36 min. ♍. ♄ comes to the Meridian a quart. past 11 at night. ♃ comes to the South 8 min: past midnight. ♂ cannot be seen. ♀ the morning star riseth an houre before the ☉. ☿ cannot be seen. The Buls eye South 10 min: past 3 morn.

November.

☉ 18 Deg. 54 min: ♄ in 2 ♈: ♃ in 16 deg. ♈. ♂ in 11 m: ♀ in 14 m: ☿ in 7 deg ♐: and ♌ in 23 deg. ♍. ♄ comes to the Meridian 12 min: after 9 at night ♃ comes to the Meridian 9 South point a little after 10 at night. ♂ and ♀ cannot be seen. ☿ sets a quarter past 5 at night. The Buls eye comes to the Meridian 10 min: past one morn.

December.

☉ in 19 Deg. 22 min: ♐: ♄ in 2 deg. ♈: ♃ in 15 deg: of ♈ ♂ in 2 deg. ♐: ♀ in 22 ♐: ☿ in 28 ♏ and ♌ in 21 deg: ♍: ♄ comes to the Meridian a little past 7 at night. ♃ 3 quart. after 7 at night: ♂ and ♀ cannot yet be seen. ☿ riseth 24 m. after 6 at night. The Buls eye South about 11 at night Orion South a quar. after 12 at night.

A

A Table of the right Ascension, Semidiurnal Arkes & declination of 30 Principle fixed stars.

The names of the Stars.	Ascent. Ho.	Mi.	Semi. Ar. Ho.	Mi.	Declinati. Deg	Min.		Magnitu.
The Whales tayle,	0	25	4	10	20	1	S	3
The Rammes head,	1	47	8	3	21	43	N	2
The head of Medusa,	2	45	0	0	39	35	N	3
The seven stars,	3	26	8	13	20	57	N	5
The Bulles eye,	4	15	7	26	15	44	N	1
The Goat,	4	50	0	0	45	33	N	1
Orions left foot,	4	59	5	15	8	40	N	1
Orions left shoulder,	5	6	6	31	5	58	N	2
The first starre in Orions Girdle,	5	14	5	59	0	35	S	2
The middle star called Orion,	5	18	5	53	1	28	S	2
The third star in Orions Girdle,	5	22	5	50	2	10	S	2
Orions right shoulder,	5	36	6	38	7	17	N	1
The great dog star Syrius,	6	33	4	34	16	13	S	1
The formost twine Castor,	7	11	9	36	32	32	N	2
The hindmost twine Pollux,	7	23	9	0	28	51	N	2
The little dog Procyon,	8	20	6	35	6	8	N	1
The heart of Hydra Alphard,	9	11	5	26	7	6	S	2
The heart of Leo Regulus,	9	49	7	13	13	45	N	2
The Lyons taile,	11	31	7	31	16	38	N	2
The Virgins spike Asimuth,	13	6	5	13	9	14	S	1
Arcturus,	13	59	8	7	2	38	N	1
The South Ballance of Libra,	14	31	4	45	14	27	S	2
The North Crown,	15	19	8	52	28	0	N	3
The Scorpions heart Antares,	16	8	3	32	25	31	S	1
The Harp,	18	25	0	0	38	29	N	1
The Vulturs taile,	18	49	7	12	13	23	N	3
The Vulturs heart,	19	33	6	42	8	0	N	2
The Swans taile,	20	29	9	0	44	0	N	2
Fomahant of Aquarius,	22	37	2	36	31	28	S	1
Andromedes head.	23	50	8	44	27	5	N	2

The use of the former Table.

In the first Column you have the names of the Stars, in the second Column the right Ascension in houres and min. In the third, the Stars semidiurnall arkes: In the fourth, the Declinations, be it either North or South: And in the last their magnitude.

How by the former Table to find the rising, setting and southing of any of those 30 fixed Stars.

IN the 1 Column of my Almanack, right against every day of the month, you have the ☉ right Ascention, and in the 3 Collumn of the precedent Table you have Stars right Ascension (by which you desire to know the rising, southing and setting) marke the difference of their Ascensions, then if the Stars Right Ascension be more than the Suns, the difference sheweth how many houres and minutes the Star commeth to the South in the evening after the Sun but if the Suns Right Ascension be more than the Stars the difference shews how many houres and minutes, the Star comes to the Meridian before the Sun, when you have thus found the Stars Southing, if you would know the Stars rising (substract from its southing, its Semidiurnall arke and you have your desire, but if you would know its setting contrarywise adde the semidiurnall arke to the southing and you have the Stars setting, as for Example, I desire to know upon the 17 of August, when the bright Star called the Vulturs heart, commeth to the Meridian riseth and sets the 17 of August in the last Collumne of my Almanack, before you shall finde the Suns Right Ascension to be 10 houres and 24 minutes: and in the last Table right before

before the Stars name in the ſecond Columne you have the ſtar Right Aſcenſion to be 19 houres & 33 minutes, the difference of their Aſcenſions is 9 houres and 9 minutes, at which time afternoone this ſtar comes to the Meridian: I finde by the laſt Table in the third Columne the ſemidiurnal arke to be 6 houres and 42 minutes, which I ſubſtract out of the ſtars comming 9 houres and 9 minutes, and there remaines 2 houres 27 minutes, at which time the ſtar riſeth, then I adde the ſemidiurnall arke to the ſtar comming to the Meridian, and the product is 15 houres and 51 minutes, or 3 houres and 51 minutes after midnight, at which time the Vulturs heart ſets.

Aſtronomicall Notes.

THe true Proceſſion of the Equinoctiall or the diſtance of the firſt Star of the Rams Horne, from the Equinoctial pointe according to the Rodolphine tables is 28 deg. 12 min. and 42 ſecond. and according to Lansbergs tables, is 28 deg. 18 min. 37 ſecond. and 20 thirds. But according to Argol, the true Proceſſion of the Equinoctiall point is 28 deg. 14 min. and 15 ſecond.

The Obliquity of the Zodiack, according to Tycho, is 23 deg. 31. minutes and 30 ſec. and according to Lansberg, 23 deg. 30. min. and 29. ſec. But according to the pruſſenicall tables it is 23 deg. 28 min. 0 ſec. The Eccentricity of the ☉ is 3600 parts the ſemidiam. being divided into 10000 parts.

A Table ſhewing the Longit. and Latitude, and diſtance, in miles, of ſome of the moſt famous Cities, and notable places in the world, from the moſt honorable City of London.

Names of the places.	Longit. deg.	m	Lati d.	m	Diſtance in miles.	Their true bearing from London.	Longeſt day. h.	m.	Sunri. Bor Aſt.
Ruſſia	57	29	59	29	1320	East by No.	17	82	8 Beſ.
Muſcovia	80	0	59	0	2620	East by No.	17	82	8 Beſ.
Calecut	112	40	10	29	4840	S E. by East	12	40	5 48 Beſ
Babilon	82	20	33	c	2710	East S. East	14	143	46 Beſ
Conſtantinople	61	10	44	40	1480	East S. East	15	34	2 22 Beſ
Hungaria	50	0	48	1	300	East S East	16	02	7 Beſ
Antwerp	31	20	50	30	120	East S. East	16	160	22 Beſ
Amſterdam	33	0	51	25	270	East	16	260	23 Beſ
Samaria	72	21	47	41	2300	East S. East	14	173	3 Be.
Damaſcus	74	29	33	c	2350	Sou. E: by E.	14	503	10 Be.
Ieruſalem	72	20	32	30	2320	Sou. E: by E.	14	143	3 Be.
Athens	56	10	40	c	1140	Sou. E. by E.	14	532	2 Be.
Egypt	64	3	30	c	2650	Sou. E. by E.	14	22	50 Beſ
Venice	41	40	44	59	720	Sou. E. by E.	15	31	4 Beſ.
Rome	42	30	32	0	890	Sou: E. by E.	15	41	0 Beſ
Bermoodes	319	0	32	46	3400	W: S: W:	14	195	0 Aft
New England	312	0	43	c	3000	W: S: W:	15	05	32 Aft
Virginia	302	0	36	0	3600	W: S: W:	14	245	32 Aft
Dublin	16	41	53	11	290	N: W: by N:	16	44	32 Aft
Paris	29	25	48	30	240	S. E: by Sou.	16	140	0 Aft
Calez	20	51	36	10	5	South East	16	200	20 Aſ.
Friſland	351	0	62	0	1400	W: N: W:	19	200	0 Beſ
Greenland	0	0	75	c	1400	West N: W:	23	000	0 Aſt
Edenbergh	22	10	57	15	280	Nort N: W:	17	200	17 Aft
London.	25	30	51	31	0000	0	0	1626	0 00 Aſt

The uſe and explanation of this Table.

FOr that I know it is a thing deſired of many to hear and diſcourſe of places remote, for their ſatisfaction I hav

haue set forth this Table, the vse wherof is this: Seek the place whose distance you desire to know, in the next Colu. you haue the places Long. in deg. & min. the 3 Col. the Lat. in the 4 Col. the places distance in miles from London, in the 5 Col. their true bearing: in the 6 Col. the length of the longest day in the 7 & last Col. the time of the Sun riseth either before or after it riseth at London.

Example.

I Desire to know all the aforesaid by Ierusalem: in the 2 Col. right against Ierusalem, I find the Longit. to be 72 deg. & 20 min. the Latit. 32 deg. 30 min. the distance, in miles is 2320 miles, it lyeth South East by East: the Longest day I find in the 6 Col. to be 14 hour: & 14 min: & lastly I find that the Sun riseth 3 & 3 min: before it doth at Lond.

A briefe discourse of the naturall causes of watery Meteors, as Snow, Haile, Raine, &c.

YOu must first vnderstand, that all watery Meteors, as Raine, Snow, or such like, is but a moyst vapour, drawn vp by the heat of the Sun, and vertue of the rest of the planets beyond the first and into the middle region of the ayre, which being dissolued, falleth vpon the earth, as snow, raine, haile, &c.

Of the Raine bow.

PLiny saith, the Raine bow is made by the Sun beams striking vpon a hollow cloud, when their edge is repelled, and beaten back against the Sun, and thus ariseth variety of colours, by the mixture of clouds, ayre, and fiery light together, the signification thereof is, that if it appeare before raine, it signifieth raine to follow, but if it be in the time of raine, it signifieth faire weather.

Of Raine.

OF these kinds of meteors, I will speake but briefly, raine is a cold vapor, and earthly humor, raised from

the earth, and waters, into the middle region of the ayre, whereby the extremity of the cold, is thickned into the body of a cloud, and after being dissolued, falleth in drops vpon the earth.

Of Haile.

HAile is made of raine frozen into Ice, as the drops fall vpon the earth, and so in steed of drops commeth down haile stones, which sometimes are very great.

Of Snow.

SNow is of the same matter as haile, but not growne so hard together.

Of Frost and Dew.

WHen in the day time, through the faint heat of the Sun, there is a cold & moyst vapor, drawn vp a little from the earth, into the lower region of the ayre, presently at night it descendeth down vpon the earth againe, and is called Dew, in the spring or harvest, it is a signe of good weather, but if by the meanes of cold it be frozen, it is then called a frost, and therefore Dewes come not so often in hot weather, nor in windy, but after a calme & cleare night; Frosts dry vp wet, and moysture, for when the Ice is melted, the like quantity of water in proportion is not found.

Of Wind.

WInd is nothing but many exhalations drawn from the earth, and forced sidewise about it.

Of Earth-quakes.

PLenty of winds gotten into the bowels, holes and corners of the earth, bursting out of the earth, and the earth closing again, causeth the shaking or Earth-quake, and betokeneth war.

Of Thunder and Lightning.

WHen an exhalation hot and dry, mixt with moysture is carried vp into the middle region of the ayre, and there inclosed in the body of a cloud: Now these two contraries being shut or pent vp in one room together, fall at variance, whereby the water, and the fire agree not, vntill they

they haue broken the prison, wherein they were pent, so the fire and water fly out of the cloud, the breaking thereof maketh a noyse like the running of chariots, which we cal Thunder, & the fire Lightning, and the water maketh the raine, which vsually happens at the time of Thunder.

Many other wonderous, kinds of Meteors which are burning Dragons, Comets, or Blazing Stars, Falling Stars, which I think good at this time to omit.

A table shewing how long the day is dawning before the Suns rising or continuance of twilight after Sun-setting, calculated for the Suns distance of 15 deg: under the Horizon.

Deg	Capri.		Aquarius		Pisces,		Aries,		Taurus.		Gemini		Deg
	ho.	mi.	ho.	min.	ho.	min.	ho.	min.	ho.	min.	ho.	min.	
0	1	53	1	47	1	39	1	40	1	54	2	36	30
3	1	53	1	45	1	39	1	41	1	57	2	43	27
6	1	53	1	44	1	39	1	42	2	0	2	50	24
9	1	52	1	43	1	38	1	43	2	3	2	57	21
12	1	51	1	42	1	38	1	44	2	7	3	7	18
15	1	51	1	41	1	38	1	45	2	10	3	35	15
18	1	50	1	40	1	38	1	46	2	15	3	19	12
21	1	50	1	40	1	38	1	47	2	19	0	Continual twilight.	9
24	1	49	1	40	1	39	1	49	2	24	0		6
27	1	48	1	39	1	39	1	51	2	30	0		3
30	1	47	1	39	1	40	1	54	2	36	0		0
	Sagita.		Scorpio,		Libra,		Virgo,		Leo,		Cancer.		

The use of this Table following in this Example,

The 4 of March the sun is in the 24 deg. of Pisces now comming to this Table I find pis. on the head & in the first Col. I must proceed downwards until I come against the 24 deg. on the left hand of the Table, & there I find in the common angle right under pisces 1 houre & 39 min. & that is the time as the day is dawning before sun rising or the continuance of twilight after sun settin that 4 of March; but if the suns place be found at the bottom of the Table then the deg. must be found on the right hand, & thus you may find the distance any other day, which distance may be called either the dawning or twilight.

Certaine Obſervations and new diſcoveries made in the Celeſtiall Regions.

MAny ſingular Inuentions and new diſcoueries haue proceeded from the Aſtronomers of late times, as firſt M. Galileus Mathematician to the Duke of Medicis a principall furtherer of the Perſpectiue glaſſes hee hath obſerued by them, that the fixed ſtars do not borrow their light of the ☉ as other wandring & inferiour ſtars, which obſerue their motion about the ☉, but to glitter in their owne inbred light as the ☉ doth. That the Planet ♃ hath 4 ☽ incircling about his body, as the globe of the earth hath one. That ♄ is of a Triquetrall forme. That ♀ doth borrow her light of the Sunne as the Moone doth, appearing ſomtimes full of ſhape as the Moone doth at the full and ſometimes halfe light, and ſometimes more or leſſe iuſt as the ☽ doth alter her motion, being about the ☉. That the ☽ hath diuers Mountaines, Vallies, Sea & Land, and an Atmoſphera of fire, incompaſſing her body as hath our Earth. That as we receiue light from the ☽, ſo the ☽ receiues ſome light from vs. That the Sea is cauſed to ebb & flow by the Earths motion about the ☉. That there are no ſolid orbs. That the ☉ hath diuers ſpots as well as the ☽ & obſerues a reuolution about his own center in 28 dayes. That the ☉ moues not about the earth but the earth about the ☉ once a yeat & about its own center euery 24 houres. That the Refraction maketh the ☉ to ſeeme about its riſing halfe a deg: more aboue the Horizon, than indeed it is, and therefore vnder both the Poles they haue day a long time together. That no Planet is biger than the earth (the Sun excepted) but leſſer many hund. times, and this is eaſily proued, the ☽ then muſt be bigger than any of the other Planets, being but leſſe than the earth 42 times. That ☿ hath eclipſed ♀ and ♀ hath eclipſed ☿.

Certaine

Certain Obſervations made by me & others of my friends, in the place of the Planets.

BEcauſe thoſe that haue Aſtronomicall tables may calculate the places of the Planets for theſe times, as I haue obſerued, which I know will be to their content, how euer it cannot be amiſſe to ſet down ſuch obſeruations which I haue faithfully obſerued.

1640 vpon the 8 of Auguſt ♃ in the 10 deg: 36 min: ♍: the lati. of ♃ about one min & an half ſouth, tuſt at 8 at night. 1639 vpon the 22 of May the eclipſe of the Sun began at the City of Coventry, tuſt 2 min: after 4 after noone the greateſt obſcurity was tuſt at 5 a clock and 9 min: and the end moſt exactly at 6 & 5 min: the whole duration was 2 hou: and 3 min: & the quantity obſcured was 9 digits & 23 min: 1639 vpon the 23 of Novem ☾ came tuſt vnder the Sun at 3 a clock & 36 min: & continued vpon the Sun halfe an houre the true place of the Sun, & ☾ were in ♐ 10 deg: and 19 min. This obſeruation doth not agree with Lansbergs Table, but the Eclipſe of the Sun commeth ſomewhat nearer the truth, for the Sun was Eclipſed 8 dig: & 50 min: for the time of the beginning & ending, he differs much from obſeruation. Vpon the 26 of March 1640 tuſt at 9 a clock at night I obſern'd the ☽ place to be in the ♎ deg. of Libra, & 32 min: & in this obſeruation I conſidered the Paralax, Refraction & Lati.

Obſervations for Husbandmen.

IN Ianuary take off ſuperfluous branches from fruit trees, and prepare your ground for gardens uncover tree-roots, cut your Vines about Chriſtmas time. Set quickſets roſes and ſallets in the month of *Febru.* and now cover up the roots of your trees with good earth which you opened before in the beginning of *January.* In *March* you may graft but in planting and grafting chuſe a warm time, whereof let not the wind be in the *Eaſt*

or

or *North* because such winds are commonly nipping, especially being helped by any aspect of the ☾ with ♄ or ♀ in cold signes, as ♍, ♒, ♏, ♉, ♓ or ♑.

In the begining of *May* set and sow tender hearbs and seeds in your gardens in a good temperature of Aire.

If you meane to preserve flowers and fruits gather them in a full ☽ let the *Sun* shine first upon them and they will keep the better, but let them not be dryed in the *Sun*, least the *Sunne* draw away part of their vertue.

Remove young trees either in the end of *October*, or *November*, or *February*, and be sure to set that side *South* which was *South* before, because it cannot indure the cold *North* wind.

Sheare sheep the ☽ increasing and their fleeces will grow the better again the like observe for cutting of Haire the ☽ in ♉, ♍ or ♎.

Geld cattell the ☽ in ♈, ♐, or ♒, being in her last quarter.

Gather all fruits that you mean to keep in a dry time when the ☽ is at the full.

Sow all such seeds as have round roots (as Onions, Leeks & Turnips, &c.) either 3 or 4 dayes before the full or 3, or 4 dayes after the full.

FINIS.

A Table of the increasing and decreasing of the dayes, as they either lengten or shorten the first 6 monthes.

dayes	Ianua.		February.		March.		Aprill.		May.		Iune.	
	ho.	mi.	ho.	min.	ho.	min.	ho.	min.	ho.	min.	ho.	min.
1	0	28	2	6	3	54	6	0	7	48	9	59
2	0	30	2	9	3	58	6	4	7	52	9	0
3	0	32	2	12	4	2	6	8	7	54	9	2
4	0	34	2	16	4	6	6	12	7	58	9	3
5	0	36	2	18	4	10	6	16	8	0	9	4
6	0	38	2	22	4	14	6	20	8	4	9	5
7	0	40	2	26	4	18	6	24	8	8	9	7
8	0	42	2	30	4	22	6	27	8	12	9	7
9	0	46	2	34	4	26	6	30	8	14	9	8
10	0	48	2	38	4	30	6	34	8	18	9	9
11	0	50	2	42	4	34	6	38	8	20	9	10
12	0	53	2	44	4	38	6	42	8	22	9	11
13	0	56	2	48	4	42	6	46	8	24	9	0
14	1	0	2	52	4	46	6	50	8	26	9	0
15	1	4	2	56	4	50	6	52	8	28	9	0
16	1	8	3	0	4	54	6	56	8	32	9	1
17	1	10	3	4	4	58	6	58	8	34	9	2
18	1	14	3	8	5	2	7	2	8	36	9	3
19	1	18	3	12	5	6	7	4	8	38	9	4
20	1	22	3	16	5	10	7	8	8	40	9	5
21	1	26	3	20	5	14	7	12	8	42	9	6
22	1	30	3	24	5	18	7	16	8	44	9	8
23	1	34	3	28	5	22	7	20	8	46	9	10
24	1	38	3	32	5	26	7	22	8	48	9	12
25	1	42	3	36	5	30	7	26	8	50	9	14
26	1	46	3	40	5	35	7	30	8	51	9	16
27	1	48	3	45	5	40	7	34	8	54	9	18
28	1	52	3	50	5	44	7	38	8	55	9	20
29	1	56			5	48	7	42	8	56	9	22
30	2	0			5	52	7	44	8	57	9	24
31	2	4			5	56			8	58	9	26

The dayes decreafe.

A Table of the increasing and decreasing of th
dayes as they either lengthen or shorten the
last 6 months.

dayes.	July.		August.		Septem.		October.		Novem.		December.	
	ho.	mi.	ho.	mi.	no.	mi.	ho.	min.	ho.	min.	hor.	min.
1	0	2	1	48	3	46	5	48	8	42	7	58
2	0	22	1	52	3	50	5	52	8	46	9	0
3	0	24	1	56	3	54	5	56	8	50	9	2
4	0	26	2	0	3	58	6	0	8	54	9	3
5	0	28	2	4	4	2	6	4	8	58	9	4
6	0	30	2	6	4	6	6	12	9	0	9	5
7	0	32	2	10	4	10	6	16	9	4	9	6
8	0	34	2	13	4	14	6	20	9	8	9	7
9	0	36	2	16	4	18	6	24	9	12	9	8
10	0	48	2	18	4	22	6	28	9	16	9	9
11	0	42	2	22	4	26	6	30	9	18	9	10
12	0	44	2	26	4	30	6	34	9	20	9	10
13	0	46	2	30	4	34	6	38	9	22	9	0
14	0	48	2	34	4	38	6	42	9	24	0	0
15	0	50	2	38	4	42	6	46	9	26	0	0
16	0	54	2	42	4	46	6	50	9	28	0	1
17	0	56	2	44	4	50	6	52	9	30	0	2
18	1	0	2	48	4	54	6	56	9	32	0	3
19	1	4	2	52	4	58	6	58	9	34	0	4
20	1	8	2	56	5	2	6	2	9	36	0	5
21	1	10	3	0	5	6	7	4	9	38	0	6
22	1	14	3	4	5	10	7	8	9	40	0	8
23	1	16	3	8	5	14	7	12	9	42	0	10
24	1	20	3	12	5	18	7	16	9	44	0	12
25	1	24	3	16	5	22	7	20	9	46	0	14
26	1	26	3	20	5	26	7	22	9	48	0	16
27	1	30	3	24	5	30	7	26	9	50	0	18
28	1	34	3	28	5	36	7	30	9	52	0	20
29	1	38	3	32	5	40	7	34	9	54	0	22
30	1	42	3	37	5	44	7	38	9	56	0	24
31	1	46	3	41								26

The dayes increase.